

possibility such as temperatures other than the disclosed..." Applicants respectfully disagree because the cited passage fails to even hint that the temperatures used in the range (300 – 400°C) that Cheung teaches can or should be modified. Instead, the cited passage mentions that changes may be made to outfit 8 inch substrates, changes may include using other chamber sizes or chambers, and changes may include using other process values such as "gases." Thus, without more, the Cheung reference is completely silent on using other temperatures, either higher or lower, let alone the claimed temperature range, which represents, not a borderline temperature change, but a 25% or greater increase in the temperatures suggested by Cheung. This fact alone evidences that the Patent Office has not established a prima facie case of obviousness. ]\*

It is not taught or suggested that one of ordinary skill in the art, based on Cheung, would employ significantly higher temperatures, such as by 25% or greater, in forming the silicon-oxide-based film. Accordingly, there is no teaching or suggestion in the cited art to modify Cheung in the manner suggested by the Patent Office.

## 2. Secondary Considerations Negate a Finding of Obviousness

Secondary considerations further negate a finding of obviousness because Applicants' results represent an unexpected result over the prior art. Cheung discloses use of a "low nitrogen content material, such as silicon oxide..." Cheung, col. 15, lines 36-37. However, as mentioned in applicants' specification at page 2, lines 25-28 (emphasis added): "As a result, the inventor has found that in a case where a high-resolution chemically-amplified resist is adopted, the geometry of a resist pattern is deteriorated even when nitrogen atoms are present in trace amount on the surface of a silicon oxide film." Thus, Cheung's disclosure of low content nitrogen material does not eliminate the problem being solved in applicant's invention. Rather, it is the combination of forming a silicon-oxide-based film over a substrate, wherein the silicon-oxide-based film is formed at an unusual temperature of 500°C or more by means of a plasma CVD technique that can eliminate the deterioration problem by an unexpected amount. For example, referring to Table 1 of the present disclosure, Examples 1-3 (formed within the claimed temperature range) result in a 2 to 6 times improvement with respect to the degree of tapered corner of the subsequently formed resist layer as compared to Comparative Examples 3 and 4, which are formed within the temperature range employed by Cheung. Similarly, with respect to Table 2, resists formed over silicon-oxide-based films formed in the claimed temperature range represent a 2 to 4 times improvement over Comparative Examples 6 and 7, formed in Cheung's temperature range. Accordingly, applicants

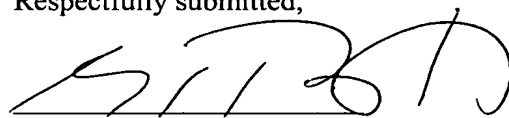
respectfully submit that these unexpected and superior results establish that the claimed invention is not obvious over the art of record and that claims 1, 3, and 5 are patentable over the art of record.

### CONCLUSION

Applicants believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

January 24, 2003  
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Respectfully submitted,



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